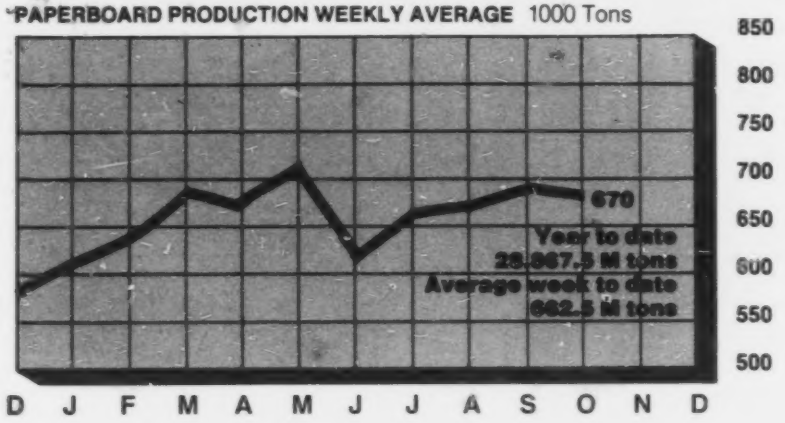
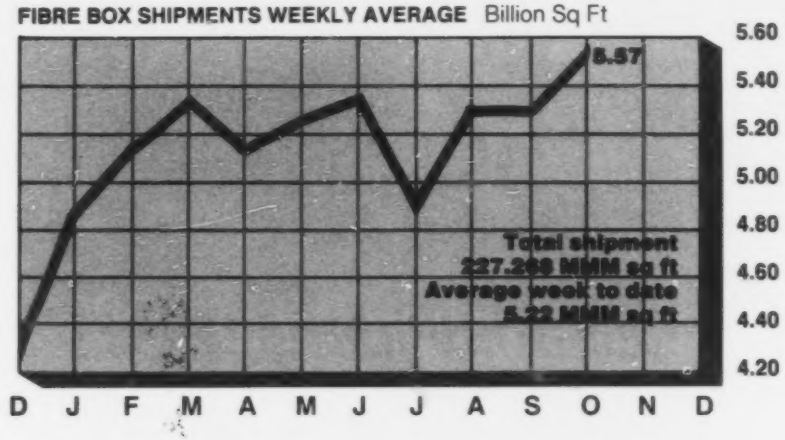
INDUSTRY
STATISTICS FOR 1984

PAPERBOARD PRODUCTION WEEKLY AVERAGE 1000 Tons



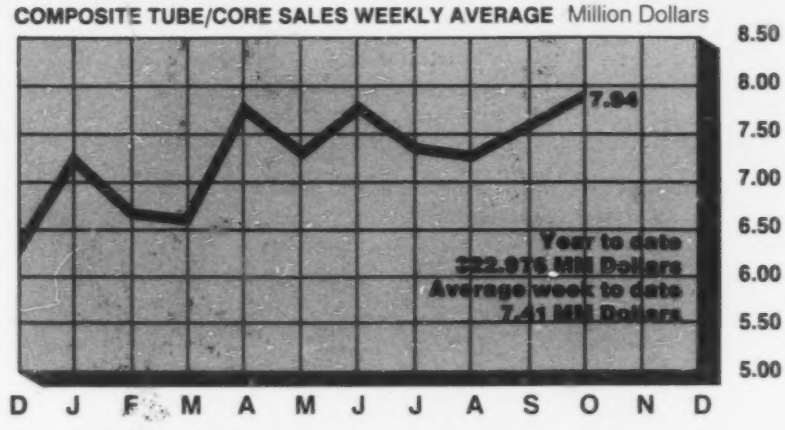
PAPERBOARD MILL OPERATIONS:
The first 10 months of 1984 ended with total average-week board volume up 8.4% from last year, which had been 8.7% above '82, which was down 9% from '81, which had been 3.4% up from 1980. Thus, this year's tonnage at October-end is at the all-time high for that point in any year, and indeed is higher than the total volume for a year as recent as 1972. However, the weekly margins over last year's output continue to narrow, as the upturn strengthened then, and both years' closing volumes may be about equal.

FIBRE BOX SHIPMENTS WEEKLY AVERAGE Billion Sq Ft



PAPERBOARD-TYPE PRODUCTION:
In October, 2965.8 M tons of board output (1.4% up from '83) comprised 2209.0 M of containerboards (1.8% up) and 756.8 M tons of boxboards (0.3% up), as projected from the API's "production by furnish" data. This recent closing-in of the two years' output margin—which in June had been 9.7%—emphasizes the strength of upsurge in late-month 1983; it does not represent a fade-out this year. Indeed, this sustained high output may denote a level of box demand that presages a good Holiday season.

COMPOSITE TUBE/CORE SALES WEEKLY AVERAGE Million Dollars



RIGID PAPER BOXES.
Setup box billings, which had encountered a distinct midyear downturn, have reversed those fortunes and now show double-digit improvements from '83 in national average, as well as a continued display of the industry's most remarkable geographical variations. Business for the year ranges month-to-month, from great upturns in some area to similarly marked slumps in others. The billings advance may be partly due to higher unit prices, like those of the folding cartons, which rise about 10-12% a year.

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paperboard packaging

JANUARY 1985 / $2.00

Industry Forum Sounds Off!
"We're getting better performance from shipping containers."
"U.S. carton makers need precise skills to do aseptic."
"Get the most out of existing equipment."
"What customers care about is stacking strength."
"The name of the game is profit."
"Combination packaging offers a real growth opportunity."

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paperboard packaging

January 1985, Volume 70, No. 1 ABP BPA

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Persistent plastic pressures. *Mark Arzoumanian*

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Recycling scrap sectors' growth slows/DRUPA 86 to include biggest U.S. show ever.

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Another win for paper. *Fred Sharring*

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The first meeting of the Industry Forum features a lively discussion of innovations, industry needs and competitive new materials in the corrugated and folding carton areas.

30 FLEXO PRESS CONVERSION
An efficient doctor-blade wiping system, a "brainy" electronic drive and headache-free anilox rolls make this letterpress-to-flexo conversion an exciting innovation.

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A survey of U.S. and Canadian box plant managers reflects a trend toward consolidation of boxmaking operations. We have fewer plants and faster machines.

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In the U.K. and all of Europe, folding carton merchants will stay competitive only through scrupulous attention to market attrition, social trends, and customer demands. *by Rowena Mills*

58 FUTURE IS FOCUS AT ITALIAN PLANT
Imballaggi Nottoli S.p.A., Lunata, Italy, grows steadily in an area rich in numerous monuments, medieval churches and cultural treasures.
by Mark Arzoumanian

64b WORLD NEWS
FEFCO seminar promises Nice time/Inmont makes licensing deal with Chinese firm.

65 STRIPPER STOPS WASTE
Size and thickness of sheet can be varied without adversely affecting operation—and at more productive runs through the diecutter—if you've got the right equipment.

66 PRODUCT OF THE MONTH
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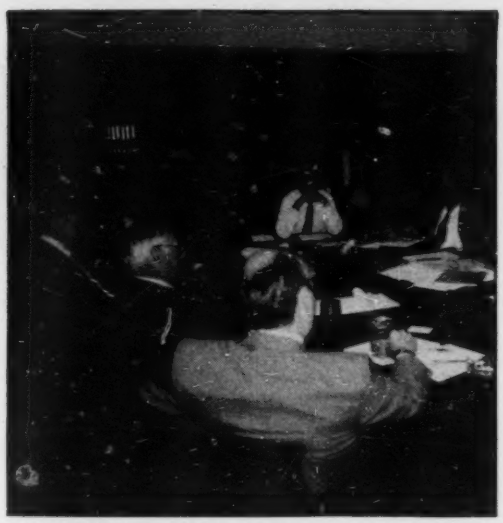
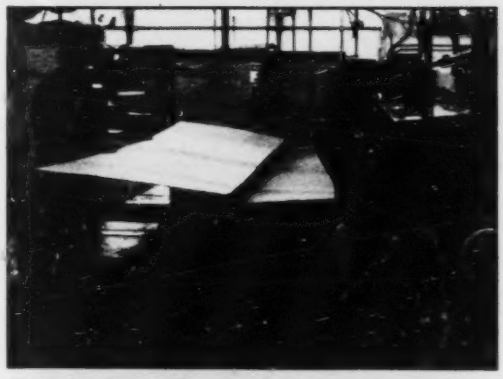
Expand your options by getting the facts.



18 Industry Forum in Cleveland



30 Letterpress-to-flexo conversion

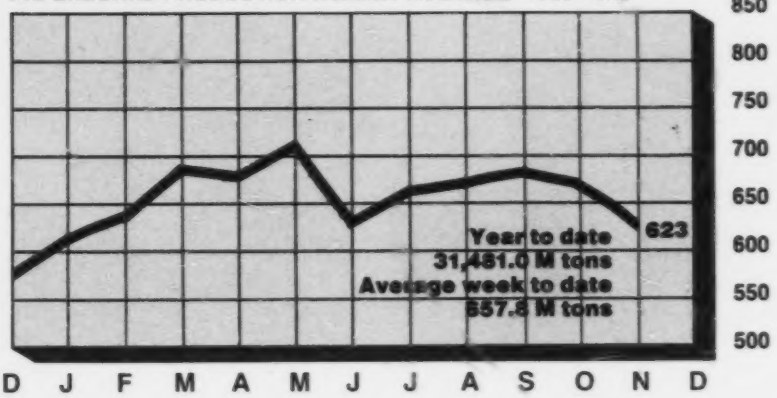
58 Martin Maxline 1840 at Nottoli S.p.A.

COMING

February: Preprint in Europe/MSU packaging school
March: Merger, acquisitions/Flexo update/Converflex/AICC
April: Boxboard report/Customer feedback/AICC Hall of Fame

INDUSTRY STATISTICS

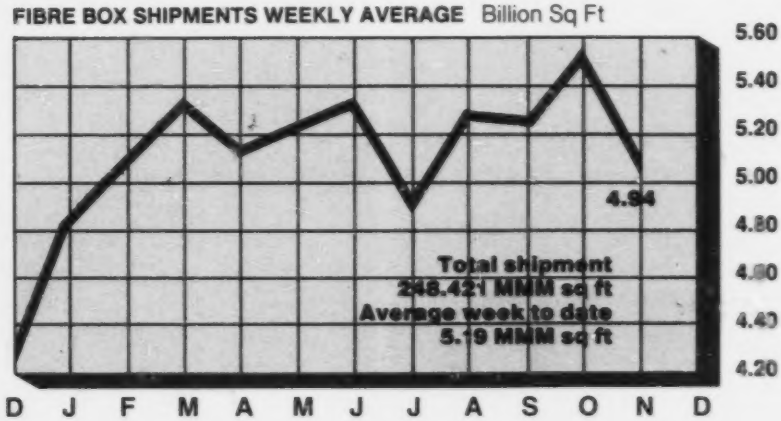
PAPERBOARD PRODUCTION WEEKLY AVERAGE 1000 Tons



Mill operations

With one month of 1984 remaining, total average-week board output was 6.2% above '83—down from a 9.6% margin at midyear—and compared with a 1983 increase of 8.9% above '82, a drop in '82 of 7.9% from '81, a rise of 3% in '81 from '80, and a drop of 1.9% in '80 from then-record year 1979. So 1984 will surely set new high annual production tonnage for the second straight year. With this tailoff in late months, however, there is room for doubt that 1985 will reach another record.

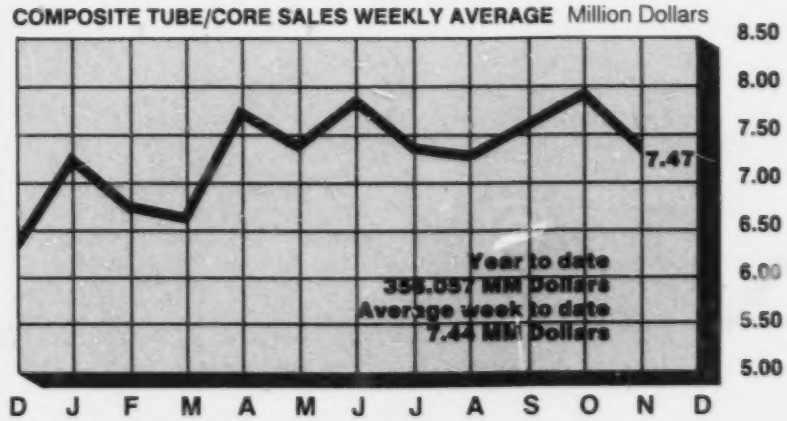
FIBRE BOX SHIPMENTS WEEKLY AVERAGE Billion Sq Ft



Board production

In November, 2001.7 M tons of containerboards (down 4.7% from '83) and 669.4 M of boxboards (down 5.6%) combined for a 4.1% overall decrease, as projected from the American Paper Institute's "production by furnish" data. One effect of this late-year easing is that the ratio of containerboard to boxboard moves closer to 3-to-1, from the long-traditional 2-to-1. Another effect is that, despite recovery from the recessive 1982 year, boxboard grades tonnage continues to reflect the competition from alternates.

COMPOSITE TUBE/CORE SALES WEEKLY AVERAGE Million Dollars

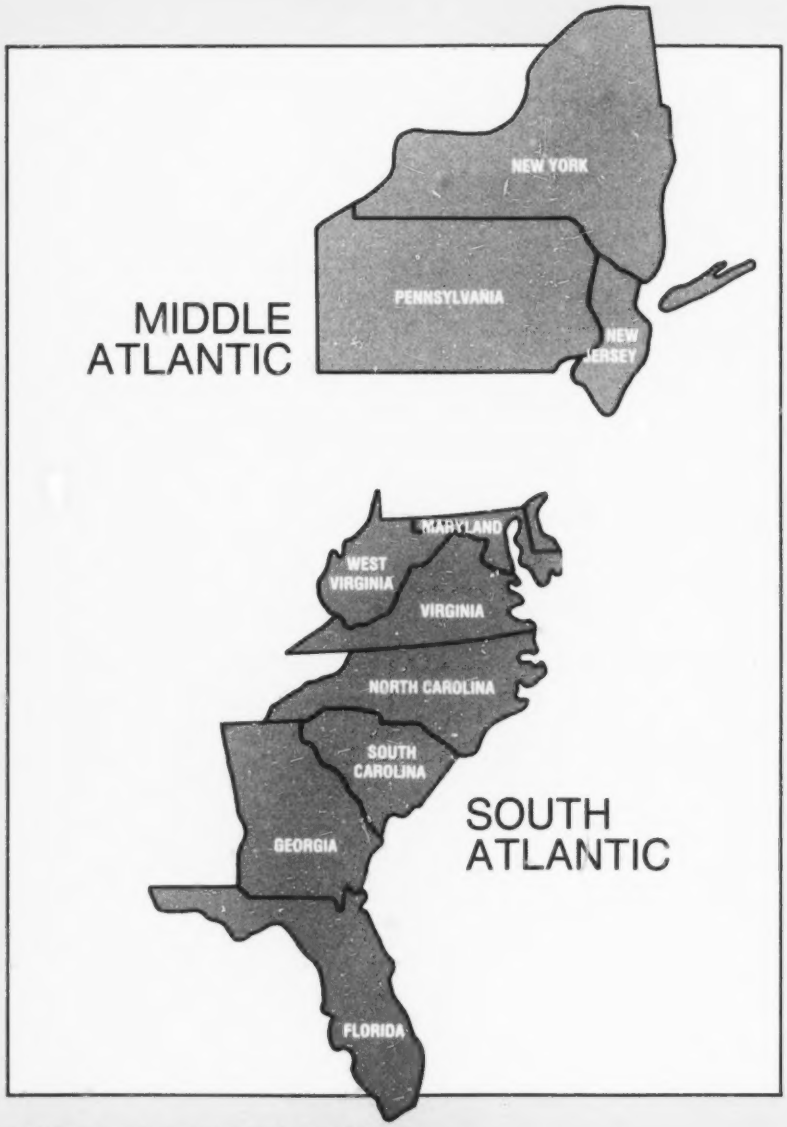


Rigid paper boxes

Through the first 11 months of '84, setup boxmakers reported a 4% rise from '83 grand total billings. But three of the National Paperbox & Packaging Association's eight regional divisions remain below '83, with improvements chiefly in industrial sectors that had furthest to go from recession. One bit of good news: average price per ton shipped reportedly has improved a bit beyond the present degree of dollar inflation.

Equipment Status Report: What's on-line?

A survey of U.S. and Canadian box plant managers reflects a trend toward consolidation of boxmaking operations. We have fewer plants and faster machines.



What has until now been known as Paperboard Packaging*'s annual Buying Forecast will from now on be known as the Equipment Status Report. It will continue to appear in the January issue.*

The name change is for several reasons. Primarily, we no longer are publishing "forecasts" of the various industries of concern to our readers: the corrugated, folding carton and rigid box industries. The annual Census report, published in June and based on a much more thorough surveying of the industry, will provide much more accurate information on estimated expenditures in the year ahead.

Insofar as the following tables reflect the existing equipment-in-use situation and not a prediction of what will be on-line in the months ahead, we felt it necessary to clear up any confusion that might have resulted from retaining the word "Forecast."

A brief comparison of U.S. data with last January's points up a trend of which any box plant official with open eyes and ears is already well aware: the rising consolidation of paperboard converting operations and the attendant reduction in number of facilities. We reported in January 1984 that there were 612 corrugating plants in the U.S.; our current figure is 610. The number of sheet plants dropped from 713 to 701. There are now 640 corrugators making board, compared with 655 last year. The number of folding carton plants fell from 562 to 525.

The statistics were compiled from a survey of box plants as listed in our Fall 1984 Official Container Directory*, which lists all plants in North America.*

In previous issues, Paperboard Packaging *published other statistics on the corrugated and folding carton industries, along with analyses of those industries and the rigid box market. Space restrictions have forced us to narrow our focus to the two major markets, but we've made an editorial commitment to expand our feature coverage of the rigid box industry in upcoming issues.*

U.S. TOTALS

Corrugated

Corrugating plants	610
Sheet plants	701
Complete corrugators	640
Separate single facers	124
Letterpress printer-slotters	2010
Flexo printer-slotters	786
Flexo folder-gluers	1147
Folder-gluers	1003
Infold gluers	92
Tapers & folder-tapers	1945
Stitchers & folder-stitchers	1441
Flatbed, platen diecutters	1613
Rotary diecutters	769
Wax impregnators	207
Curtain coaters	215
Laminators	503
Unitizers, palletizers, strappers, bundlers	3107
Computers	608

Folding Carton

Folding carton plants	525
Cutters & creasers	2309
Letterpress printers	642
Offset (litho) printing presses	747
Offset: up to 3 color	314
Offset: over 3 color	362
Offset: up to 60 inches	419
Offset: over 60 inches	127
Flexo presses	209
Gravure presses	127
Gluers	1825
Waxers	196
Waxing attachments	118
Laminators	117
Sheet cutters (guillotine)	448
Sheeters (web fed)	237
Slitter-rewinders	76
Case sealers	264
Computers	162

SOUTH ATLANTIC

Corrugated

Corrugating plants	98
Sheet plants	85
Complete corrugators	100
Separate single facers	10
Letterpress printer-slotters	266
Flexo printer-slotters	132
Flexo folder-gluers	185
Folder-gluers	147
Infold gluers	4
Tapers & folder-tapers	270
Stitchers & folder-stitchers	199
Flatbed, platen diecutters	159
Rotary diecutters	114
Wax impregnators	35
Curtain coaters	32
Laminators	53
Unitizers, palletizers, strappers, bundlers	439
Computers	86

Folding Carton

Folding carton plants	70
Cutters & creasers	294
Letterpress printers	57
Offset (litho) printing presses	81
Offset: up to 3 color	39
Offset: over 3 color	45
Offset: up to 60 inches	45
Offset: over 60 inches	6
Flexo presses	32
Gravure presses	22
Gluers	239
Waxers	37
Waxing attachments	21
Laminators	10
Sheet cutters (guillotine)	53
Sheeters (web fed)	37
Slitter-rewinders	15
Case sealers	33
Computers	25

MIDDLE ATLANTIC

Corrugated

Corrugating plants	114
Sheet plants	121
Complete corrugators	119
Separate single facers	41
Letterpress printer-slotters	386
Flexo printer-slotters	143
Flexo folder-gluers	186
Folder-gluers	292
Infold gluers	14
Tapers & folder-tapers	352
Stitchers & folder-stitchers	254
Flatbed, platen diecutters	322
Rotary diecutters	121
Wax impregnators	29
Curtain coaters	24
Laminators	101
Unitizers, palletizers, strappers, bundlers	412
Computers	91

Folding Carton

Folding carton plants	110
Cutters & creasers	521
Letterpress printers	197
Offset (litho) printing presses	170
Offset: up to 3 color	66
Offset: over 3 color	92
Offset: up to 60 inches	105
Offset: over 60 inches	24
Flexo presses	25
Gravure presses	29
Gluers	449
Waxers	31
Waxing attachments	30
Laminators	17
Sheet cutters (guillotine)	104
Sheeters (web fed)	31
Slitter-rewinders	7
Case sealers	44
Computers	39

continued on page 38

NEW ENGLAND

Corrugated

Corrugating plants 32
Sheet plants 51
Complete corrugators ... 37
Separate single facers 13
Letterpress printer-slotters 140
Flexo printer-slotters 43
Flexo folder-gluers 56
Folder-gluers 49
Infold gluers 1
Tapers & folder-tapers 147
Stitchers & folder-stitchers 112
Flatbed, platen diecutters 129
Rotary diecutters 33
Wax impregnators 9
Curtain coaters 5
Laminators 33
Unitizers, palletizers, strappers, bundlers ... 185
Computers 37

Folding Carton

Folding carton plants ... 53
Cutters & creasers 244
Letterpress printers 78
Offset (litho) printing presses 66
Offset: up to 3 color 26
Offset: over 3 color 33
Offset: up to 60 inches 41
Offset: over 60 inches ... 15
Flexo presses 10
Gravure presses 2
Gluers 160
Waxers 17
Waxing attachments 9
Laminators 16
Sheet cutters (guillotine) 42
Sheeters (web fed) 24
Slitter-rewinders 7
Case sealers 17
Computers 15

EAST NORTH CENTRAL

Corrugated

Corrugating plants 149
Sheet plants 219
Complete corrugators .. 152
Separate single facers 32
Letterpress printer-slotters 560
Flexo printer-slotters ... 181
Flexo folder-gluers 294
Folder-gluers 218
Infold gluers 28
Tapers & folder-tapers 543
Stitchers & folder-stitchers 413
Flatbed, platen diecutters 426
Rotary diecutters 196
Wax impregnators 31
Curtain coaters 40
Laminators 142
Unitizers, palletizers, strappers, bundlers ... 863
Computers 155

Folding Carton

Folding carton plants ... 133
Cutters & creasers 586
Letterpress printers 185
Offset (litho) printing presses 194
Offset: up to 3 color 80
Offset: over 3 color 92
Offset: up to 60 inches 93
Offset: over 60 inches ... 55
Flexo presses 46
Gravure presses 50
Gluers 448
Waxers 38
Waxing attachments 29
Laminators 45
Sheet cutters (guillotine) 114
Sheeters (web fed) 59
Slitter-rewinders 21
Case sealers 81
Computers 16

WEST NORTH CENTRAL

Corrugated

Corrugating plants 51
Sheet plants 52
Complete corrugators ... 51
Separate single facers 6
Letterpress printer-slotters 154
Flexo printer-slotters 73
Flexo folder-gluers 86
Folder-gluers 74
Infold gluers 20
Tapers & folder-tapers 165
Stitchers & folder-stitchers 100
Flatbed, platen diecutters 147
Rotary diecutters 83
Wax impregnators 20
Curtain coaters 33
Laminators 38
Unitizers, palletizers, strappers, bundlers ... 292
Computers 59

Folding Carton

Folding carton plants ... 40
Cutters & creasers 199
Letterpress printers 33
Offset (litho) printing presses 61
Offset: up to 3 color 31
Offset: over 3 color 29
Offset: up to 60 inches 36
Offset: over 60 inches ... 10
Flexo presses 27
Gravure presses 4
Gluers 120
Waxers 12
Waxing attachments 8
Laminators 9
Sheet cutters (guillotine) 38
Sheeters (web fed) 19
Slitter-rewinders 6
Case sealers 19
Computers 14

EAST SOUTH CENTRAL

Corrugated

Corrugating plants 38
Sheet plants 40
Complete corrugators ... 39
Separate single facers 2
Letterpress printer-slotters 140
Flexo printer-slotters 50
Flexo folder-gluers 61
Folder-gluers 73
Infold gluers 5
Tapers & folder-tapers 130
Stitchers & folder-stitchers 90
Flatbed, platen diecutters 92
Rotary diecutters 50
Wax impregnators 8
Curtain coaters 17
Laminators 30
Unitizers, palletizers, strappers, bundlers ... 166
Computers 34

Folding Carton

Folding carton plants ... 28
Cutters & creasers 83
Letterpress printers 13
Offset (litho) printing presses 31
Offset: up to 3 color 5
Offset: over 3 color 12
Offset: up to 60 inches 15
Offset: over 60 inches 1
Flexo presses 16
Gravure presses 5
Gluers 86
Waxers 6
Waxing attachments 3
Laminators 1
Sheet cutters (guillotine) 12
Sheeters (web fed) 15
Slitter-rewinders 5
Case sealers 5
Computers 5

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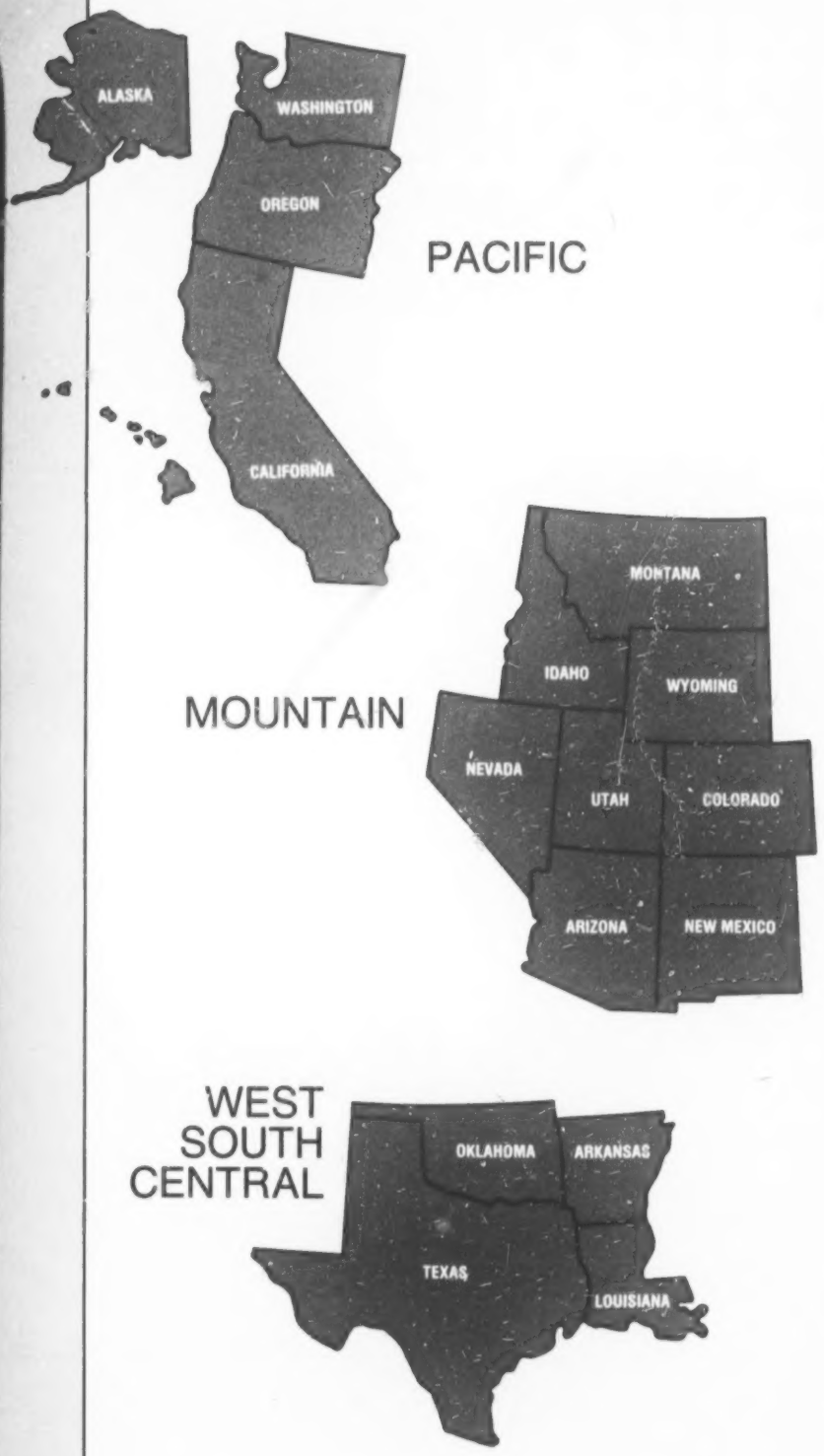

WEST SOUTH CENTRAL

Corrugated

Corrugating plants 51
Sheet plants 46
Complete corrugators ... 52
Separate single facers 9
Letterpress printer-slotters 153
Flexo printer-slotters 69
Flexo folder-gluers 88
Folder-gluers 55
Infold gluers 13
Tapers & folder-tapers 140
Stitchers & folder-stitchers 107
Flatbed, platen diecutters 86
Rotary diecutters 75
Wax impregnators 26
Curtain coaters 37
Laminators 40
Unitizers, palletizers, strappers, bundlers ... 256
Computers 54

Folding Carton

Folding carton plants ... 28
Cutters & creasers 98
Letterpress printers 21
Offset (litho) printing presses 28
Offset: up to 3 color 7
Offset: over 3 color 15
Offset: up to 60 inches 16
Offset: over 60 inches 2
Flexo presses 18
Gravure presses 5
Gluers 82
Waxers 8
Waxing attachments 5
Laminators 1
Sheet cutters (guillotine) 11
Sheeters (web fed) 12
Slitter-rewinders 3
Case sealers 14
Computers 4

continued on page 44

MOUNTAIN

Corrugated

Corrugating plants	11
Sheet plants	18
Complete corrugators	11
Separate single facers	0
Letterpress printer-slotters	33
Flexo printer-slotters	17
Flexo folder-gluers	26
Folder-gluers	21
Infold gluers	3
Tapers & folder-tapers	35
Stitchers & folder-stitchers	29
Flatbed, platen diecutters	33
Rotary diecutters	13
Wax impregnators	0
Curtain coaters	7
Laminators	15
Unitizers, palletizers, strappers, bundlers	73
Computers	14

Folding Carton

Folding carton plants	8
Cutters & creasers	55
Letterpress printers	8
Offset (litho) printing presses	25
Offset: up to 3 color	16
Offset: over 3 color	4
Offset: up to 60 inches	17
Offset: over 60 inches	0
Flexo presses	2
Gravure presses	0
Gluers	28
Waxers	2
Waxing attachments	0
Laminators	2
Sheet cutters (guillotine)	15
Sheeters (web fed)	7
Slitter-rewinders	2
Case sealers	2
Computers	15

PACIFIC

Corrugated

Corrugating plants	66
Sheet plants	69
Complete corrugators	79
Separate single facers	11
Letterpress printer-slotters	178
Flexo printer-slotters	78
Flexo folder-gluers	165
Folder-gluers	74
Infold gluers	4
Tapers & folder-tapers	163
Stitchers & folder-stitchers	137
Flatbed, platen diecutters	219
Rotary diecutters	84
Wax impregnators	49
Curtain coaters	20
Laminators	51
Unitizers, palletizers, strappers, bundlers	421
Computers	78

Folding Carton

Folding carton plants	55
Cutters & creasers	229
Letterpress printers	50
Offset (litho) printing presses	91
Offset: up to 3 color	44
Offset: over 3 color	40
Offset: up to 60 inches	51
Offset: over 60 inches	14
Flexo presses	33
Gravure presses	10
Gluers	213
Waxers	35
Waxing attachments	13
Laminators	16
Sheet cutters (guillotine)	59
Sheeters (web fed)	33
Slitter-rewinders	10
Case sealers	49
Computers	29

CANADA

Corrugated

Corrugating plants	53
Sheet plants	13
Complete corrugators	61
Separate single facers	5
Letterpress printer-slotters	119
Flexo printer-slotters	44
Flexo folder-gluers	106
Folder-gluers	48
Infold gluers	12
Tapers & folder-tapers	126
Stitchers & folder-stitchers	93
Flatbed, platen diecutters	69
Rotary diecutters	52
Wax impregnators	43
Curtain coaters	21
Laminators	16
Unitizers, palletizers, strappers, bundlers	206
Computers	22

Folding Carton

Folding carton plants	88
Cutters & creasers	388
Letterpress printers	130
Offset (litho) printing presses	147
Offset: up to 3 color	73
Offset: over 3 color	61
Offset: up to 60 inches	92
Offset: over 60 inches	13
Flexo presses	22
Gravure presses	15
Gluers	226
Waxers	39
Waxing attachments	21
Laminators	10
Sheet cutters (guillotine)	71
Sheeters (web fed)	13
Slitter-rewinders	18
Case sealers	20
Computers	32